

Bay Area Air Quality Management District
Risk Screening Assessment, A# 10419
Verizon Wireless, P# 16280
August 18, 2004

This document describes the basis for the health risk screening assessment prepared for Verizon Wireless located at 250 Courtland Drive in San Bruno, California. This facility wishes to operate a new emergency standby generator diesel engine. In order to do this, the facility must get a permit from the Bay Area Air Quality Management District (BAAQMD). The BAAQMD, as a routine part of the evaluation of a permit application, prepared this screening risk assessment.

Particulates from diesel engine exhaust, a toxic air contaminant (TAC) and a carcinogen, will be emitted during the operation of the engine. BAAQMD staff evaluated the possible impact of the diesel exhaust particulate emissions that will occur during routine operation of the diesel engine. The diesel exhaust particulate impact is expressed in terms of the increased risk of contracting cancer by individuals who live or work near the proposed engine.

The estimated increase in diesel exhaust particulate emissions that can be expected from this source is 1.88 pounds per year. Ambient air concentrations of diesel exhaust particulate were predicted using the ISCST3 air dispersion computer model. This model uses information about the facility and the emission rate of diesel exhaust particulates to estimate concentrations of TACs expected in the air at various locations around the site. The estimated concentrations of diesel exhaust particulate are used to calculate the possible cancer and non-cancer health risks that might be expected to arise from this exposure.

These potential cancer risks were calculated using standard risk assessment methodology. For residents, it was assumed that exposure would be continuous for 24 hours per day, 7 days per week for 70-years. For off-site workers, exposure was assumed to occur 46 years out of a 70-year lifetime. For students, exposure was assumed to occur 36 weeks per year over a 9-year period. Students were also assumed to have a higher breathing rate than residents. The cancer risks are based in part on the "best estimates" of plausible cancer potencies as determined by the California Office of Environmental Health Hazard Assessment (OEHHA). The actual cancer risk, which cannot be determined, may approach zero. This type of analysis is considered to be health-protective.

The potential for noncancer health effects is evaluated by comparing the long-term exposure level to a Reference Exposure Level (REL). A REL is a concentration level at or below which no adverse health effects are anticipated. RELs are designed to protect sensitive individuals within the population. Comparisons to RELs are made by determining the hazard index, which is the ratio of the estimated exposure level to the REL.

The proposed operation of the diesel engine would result in an increased maximum cancer risk of 3.7 chances in a million, and a hazard index of 0.004 for off-site workers near the facility. For residents, an increased maximum cancer risk is 0.17 chances in a million, and a hazard index of 0.0001. For students who attend Peninsula High School, the increased maximum cancer risk is 0.62 chances in a million, and the hazard index is 0.002. These health risk values, presented in the table below, meet the criteria for acceptable levels established in the BAAQMD's Risk Management Policy.

Health Risk Results		
Receptor	Increased Maximum Cancer Risk	Hazard Index
Off-Site Worker	3.7 chances in a million	0.004
Residents	0.17 chances in a million	0.0001
Students at Peninsula High School	0.62 chances in a million	0.002

School address: Peninsula High School
300 Piedmont Avenue
San Bruno, CA 94066